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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/904,674	07/13/2001	Gerhard Tebbe	4452-398	5179

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EXAMINER	
JONES, JUDSON	
ART UNIT	PAPER NUMBER
2834	

DATE MAILED: 10/29/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	09/904,674	TEBBE, GERHARD
	Examiner	Art Unit
	Judson H Jones	2834

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____ .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-21* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-21* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2 .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Specification

On page 12 lines 12 and 13 Applicant incorporates GB 2,305,743 by reference. The incorporation of essential material in the specification by reference to a foreign application or patent is improper. Applicant is required to amend the disclosure to include the material incorporated by reference. The amendment must be accompanied by an affidavit or declaration executed by the applicant, or a practitioner representing the applicant, stating that the amendatory material consists of the same material incorporated by reference in the referencing application. See *In re Hawkins*, 486 F.2d 569, 179 USPQ 157 (CCPA 1973); *In re Hawkins*, 486 F.2d 579, 179 USPQ 163 (CCPA 1973); and *In re Hawkins*, 486 F.2d 577, 179 USPQ 167 (CCPA 1973).

Drawings

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the logic device of claim 3, the brake of claim 6 and the data carrier of claim 20 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Also drawing figures 2a, 2b, 9, 10a, 10b, 16a and 16b have boxes that are unlabeled. Labels should be provided so the drawings can be understood without the necessity of referring to the specification to see what the boxes represent.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

Claims 1, 16, 19 and 21 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claims 1, 16, 19 and 21 contain the language "determining the period of the load cycle oscillation." This same language appears in the specification on page 4 line 6, on page 6 lines 8 and 9 and on page 7 line 5. On page 12 lines 11 and 12 the specification states, "The period of load cycle oscillation may be determined, for example, from vehicle condition data." Page 3 of GB 2,305,743 states "With the time period between the individual excitations determined in dependence on the driving state of the drive train on which the current natural frequency of the drive train depends ..." On page 5 of the '743 reference the operating state of the drive train is explained as being dependent on the position of the throttle and the gear the vehicle is in. Based on this explanation, what the instant device appears to do is determine the throttle position and determine what gear the transmission is in. From that information, the period of load cycle oscillation is predicted or estimated or looked up in a table. Applicant's language of determining the period of load cycle oscillation implies that the period is measured, which would be impossible since a torque pulse in opposition to the disturbance is applied "at the commencement of the change in available torque."

Claims 1, 16 and 21 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claims 1 and 21 contain the language "at the commencement of the change in available torque." Claim 16 has an equivalent phrase. While electronic control systems can act quickly and Applicant is using "a rapidly activatable electric motor" as described

on page 4 lines 21 and 22 of the specification, there still will be a finite amount of time between the change in available torque and the application of a torque pulse opposing the oscillation.

Claims 1-21 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Part of the enabling language for these claims is contained in GB 2,305,743, which was improperly incorporated be reference. That material needs to be included in the instant specification. Since Applicant attempted to make the entire GB 2,305,743 reference a part of the instant application, there is no question of new matter.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-5, 7-10, 12, 13, and 16-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Weimer et al. 6,375,205 in view of Masberg et al. 6,405,701 and Lorenz et al. 6,336,070. Weimer et al. discloses a device for damping torque pulsations for a drive unit including an engine, a transmission, a differential and drive wheels by detecting a change in available torque as described in column 5 lines 26-41. While discussing vibrations and the amplitude and frequency of the current needed to counteract the vibrations, Weimer et al. does not disclose determining the period of the load cycle oscillation. However Masberg et al. teaches in column 7 lines 44-61 predicting a rotational nonuniformity related to drive train characteristics

such as throttle position, rotary speed and crankshaft angle by using a prototype or a computer simulation. While Masberg et al. does not specifically mention the period of a load cycle oscillation, that period is one of the rotational nonuniformities of a drive unit. Since Weimer et al. and Masberg et al. are both from the same field of endeavor, it would have been obvious at the time the invention was made for one of ordinary skill in the art to have utilized the teaching of Masberg et al. and to have used drive train characteristics to predict the period of a load cycle oscillation. Weimer et al. as modified by Masberg et al. teaches phase opposition torque signals in Weimer et al. column 6 lines 59-61 but does not disclose a counter torque pulse having a duration that is about half the period of the load cycle oscillation. However Lorenz et al. teaches in column 1 lines 33-37 that smoothing out torque fluctuations has a cost in the fuel efficiency of the vehicle. Even when torque is being added to engine torque, the added energy has been converted from rotating force into electricity and back into force with each conversion involving energy losses. Since Lorenz et al. and Weimer et al. as modified by Masberg et al. are both from the same field of endeavor, it would have been obvious at the time the invention was made for one of ordinary skill in the art to have traded a certain amount of torque fluctuation for increased fuel efficiency in the vehicle by reducing the duration of the counter pulse. As for Applicant's claimed pulse duration of about half the period of the load cycle oscillation, according to *In re Aller*, 105 USPQ 233 (CCPA 1955), "More particularly, where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation." Therefore the limitation of the counter torque pulse having a duration that is about half the period of the load cycle oscillation is given no patentable weight.

In regard to claim 2, since Lorenz et al. and Weimer et al. as modified by Masberg et al. are both from the same field of endeavor, it would have been obvious at the time the invention was made for one of ordinary skill in the art to have traded a certain amount of torque fluctuation for increased fuel efficiency for the vehicle by reducing the magnitude of the counter pulse. As for Applicant's claimed pulse magnitude of about half the magnitude of the load cycle oscillation, according to *In re Aller*, 105 USPQ 233 (CCPA 1955), "More particularly, where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation." Therefore the limitation of the counter torque pulse having a magnitude that is about half the period of the load cycle oscillation is given no patentable weight.

In regard to claims 3, 7 and 8, see Weimer et al. column 5 line 66 to column 6 line 15. The control device 40 is a logic device.

In regard to claims 4 and 17, see Weimer et al. column 5 lines 35-38.

In regard to claim 5, see Lorenz et al. column 2 line 64 to column 3 line 12 and see Masberg et al. column 6 lines 54-63.

In regard to claims 9, 10 and 18, see Weimer et al. column 10 lines 2-49. See also Applicant's specification page 5 lines 10-15 for an explanation as to how a two-mass flywheel is used to apply a torque pulse to a primary or secondary part of an engine.

In regard to claims 12 and 13, see Weimer et al. column 5 line 66 to column 6 line 4. When a vehicle changes gears, the motor is disconnected from the drive train, which is an irregularity during operation of the drive system. Also a rise in available torque is an irregularity during operation of the drive system. The Weimer et al. device detects those irregularities.

In regard to claim 20, see Lorenz et al. column 2 lines 4-17.

Allowable Subject Matter

Claims 6, 11, 14 and 15 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims, provided the 112 rejections are overcome.

The following is a statement of reasons for the indication of allowable subject matter: The prior art of record does not disclose or teach a method for reducing oscillations comprising detecting a change in an available torque, determining the period of a load oscillation due to the change and applying a torque pulse in phase opposition to oscillation where the torque pulse is applied by a rotating mass via a brake as recited in claim 6. Bonfilio teaches a rotating mass in a flywheel that applies a torque pulse by friction means (i.e., a brake) in column 4 lines 8-62. Weimer et al. discloses a mass in a flywheel in column 10 lines 10-49, but that mass does not apply a torque pulse via a brake. No reason has been found for replacing the flywheel mechanism of Weimer et al. with the flywheel mechanism of Bonfilio. The prior art of record does not disclose or teach applying a first pulse with a negative value and applying a second pulse with a positive value to counteract oscillations of the drive train of a motor vehicle as recited in claim 11. The prior art of record does not disclose or teach applying a first pulse and a second pulse commencing one period later than the first pulse as recited in claim 14. The prior art of record does not disclose or teach first, second and third pulses applied to counteract oscillations in the drive train of a motor vehicle with the second pulse being directed opposite to the first and third pulses as recited in claim 15.

Any inquiry concerning this communication should be directed to Judson H Jones whose telephone number is 703-308-0115. The examiner can normally be reached on 8-4:30 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nestor Ramirez can be reached on 703-308-1371. The fax phone numbers for the organization where this application or proceeding is assigned are 703-305-3431 for regular communications and 703-305-3432 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

JHJ
October 25, 2002

Judson Jones
Art Unit 2834